INSTRUCTIONAL DESIGN AND ASSESSMENT

A Specialized Management Rotation for Dual PharmD/MBA Candidates

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Objectives. This paper describes the development, implementation, and assessment of a unique 8-week management experiential rotation designed for students in the dual Doctor of Pharmacy/Masters of Business Administration (PharmD/MBA) program at Shenandoah University who aspire to management and leadership positions within the healthcare industry. A major goal of this rotation was to allow students to apply the management concepts they learned in the classroom to the healthcare organization.

Methods. Twenty-eight PharmD/MBA students from the classes of 2001 and 2002 participated in an 8-week management rotation. Rotation settings included chain stores, hospital pharmacies, pharmacoeconomic organizations, pharmaceutical companies, and pharmacy associations. The 8-week rotation focused on working with a preceptor to observe and learn the various managerial components of the specific healthcare organization.

Results. Students were assessed on 7 dimensions. Based on both student assessments of their rotation experience, and preceptors' assessments of the students, it appears that the students exhibited excellence in the areas examined.

Conclusions. The rotation experience was beneficial in bridging the gap between learning about management skills and demonstrating them. Specific suggestions are offered for those schools of pharmacy that are considering adding a specialized management rotation to their programs.

Keywords: PharmD/MBA program, management experiential rotation, management concepts, assessment

INTRODUCTION

"...schools will begin the serious training of managers when skill training takes its place next to cognitive learning. Cognitive learning is detached and informational, like reading a book or listening to a lecture. No doubt much important cognitive material must be assimilated by the manager-to-be. But cognitive learning no more makes a manager than it does a swimmer. The latter will drown the first time he jumps into the water if his coach never takes him out of the lecture hall, gets him wet, and gives him feedback on his performance."

Although strong analytical and quantitative skills are important, they are not sufficient to become a successful manager. Successful managers must be able to work effectively with others. More specifically, successful managers must develop competence in at least 3 different skill areas: conceptual, human, and technical. Proficiency in conceptual skills includes the understanding of how different components of a business are related to each other and to the business as a whole. For example, a district manager for a drug store chain must have an understanding of the micro and macro issues affecting the performance of the stores within the manager's territory. Decision making, manpower-need planning, and organizing are specific managerial activities that require conceptual skills.

Empirical evidence supporting the contention that competent managers make a significant difference in the success of an organization is widespread. For example, a study of 968 firms in diverse industries demonstrated that those who implemented effective people management skills experienced the following results:

- A decrease in turnover of more than 7%,
- An increase in profits of $3,814 per employee,
• An increase in sales per employee of $27,044, and
• An increase in stock market value per employee of $18,641 compared to firms that had less effective management.

A study of 5-year survivability in 136 nonfinancial companies that issued initial public offerings (IPOs) in the late 1980s found that the most significant predictor of longevity was effective management. Effective management skills are more important than industry, environment, competition, and economic factors combined. A major problem is that knowing about management skills is not the same as demonstrating management skills. Applying this statement to pharmacy management curricula, what is learned in the lecture hall pertaining to the various aspects of management is only one component of ensuring that Doctor of Pharmacy (PharmD) graduates become competent future healthcare managers. This author previously described a model, based on social learning theory, for developing the management skills of pharmacy students within the classroom.

One opportunity for pharmacy students, especially those who aspire to management and leadership positions, to apply the management concepts that have been learned in a laboratory setting (ie, classroom) to a field setting is through a specialized management rotation. To this end, the major goal of this paper was to describe the development, implementation, and assessment of a unique 8-week management experiential rotation designed for students enrolled in the joint Doctor of Pharmacy/Masters of Business Administration (PharmD/MBA) program at a private southeastern school of pharmacy.

A description of the PharmD/MBA program at a private southeastern school of pharmacy is provided. The rationale and criteria for a specialized management rotation targeted to those students with specialized management education and training (ie, MBA candidates) is discussed. Student and preceptor assessments of the classes of 2001 and 2002 management rotations are discussed, along with suggestions for schools of pharmacy considering the development of a management rotation for their students.

**Background: PharmD/MBA Description**

There is one major goal of the joint PharmD/MBA program: to educate students to assume responsibilities as managers, administrators, consultants, and executives in health care systems designed to provide health care to customers. Health care managers need a broad organizational overview to successfully plan, organize, lead, and control within the dynamic health care environment. They need to know how to motivate, lead, and work with others to accomplish organizational and personal objectives. To this end, the program is directed toward providing the education students need to develop an understanding of the major functional areas in health care organizations, and to design strategic plans and policies to cope with the changing pharmaceutical and health care environments. By combining a "generalist" management degree with a PharmD degree, students will gain the requisite skills to do this and will realize significant additional career opportunities.

What are potential job opportunities for those students who graduate with the PharmD/MBA degree? The dual degree is designed to aid students who seek positions of management and leadership that require a combination of patient care and management skills. A recent descriptive report describing Pharm D/MBA programs revealed that the majority of graduates with the dual degree take initial positions in the pharmaceutical industry. Positions within industry include marketing, clinical research, academic detailing, and drug development. Other potential employment areas for graduates of the dual program include, but are not limited to:

- Institutional formulary development and management
- Pharmacoeconomics in industry and managed care
- Managed Care Management
- Biotechnology
- Management of any health care institution
- Professional association work (eg, American Pharmaceutical Association, National Community Pharmacists Association)
- Outcomes research
- Monitoring clinical trials
- Project management in health care
- Teaching in a college of pharmacy
- Chain store pharmacy management

**METHODS**

**Curriculum and Course Load**

Upon admission to the MBA program, students were required to meet with the PharmD/MBA program director to discuss required prerequisite courses and a plan of study for the completion of the MBA
component of the program. All MBA courses were offered on a 14-week trimester basis. Classes met one night per week from 6:00 PM until 9:00 PM. Each PharmD/MBA student was given a 5- to 6-week summer break. The course schedule can be found in Appendix 1.

A major advantage to prospective PharmD/MBA students is the cooperation between the School of Pharmacy and the School of Business Administration. Specifically, by taking up to 3 classes during the summers and by counting several pharmacy administration courses toward the MBA degree, students can finish both the PharmD and MBA degrees concurrently (Appendix 1). This is an advantage over the length of time to complete most dual degree PharmD/MBA programs, which, on average, take 5 years. In addition, an integral component of obtaining the MBA degree is a specialized 8-week management rotation normally done at the beginning of the candidates' fourth professional year.

Rationale for Management Rotation

As discussed previously, knowing about management skills is not the same as demonstrating them. Although, certain management skills can be demonstrated in a classroom environment, a greater and richer experience may result through practicing management skills in a field setting (rotation site) as opposed to a laboratory setting (classroom). Using this guiding principle, the following criteria for the management rotation were developed in cooperation with potential preceptors.

Course Design

The primary purpose of the specialized management rotation was to apply the management knowledge and skills learned during the PharmD/MBA educational experience at Shenandoah University to a health care setting. Managers plan, lead, organize, and control individuals and resources. Thus, a major goal was to expose the student to the daily operations of managing within a health care system. Typical management rotation sites included chain stores (eg, store, district, and regional levels), mass merchandiser pharmacies, hospital pharmacies, pharmacoeconomic organizations, pharmaceutical companies, and pharmacy associations. The organizations were chosen based on their ability and willingness to fulfill the goals of the rotation (see overview below). Shenandoah's PharmD/MBA director, the Experiential Director, and the Pharmacy School's Dean identified the potential rotation sites. The hallmark for consideration was, "Can the site provide a useful experience for our students based on our criteria?" The specific criteria varied depending on the targeted organization (eg, a chain's criteria may differ from that of a medical affairs department at a pharmaceutical company). The preceptors were mostly registered pharmacists with significant managerial experience. The few who were not registered pharmacists had advanced degrees and significant managerial experience. An overview of the basic criteria of a pharmacy chain is described below.

Overview

The 8-week management rotation focused on working with a preceptor to observe and learn the various managerial components of the healthcare organization. A tentative guideline to progression through the 8 weeks in a retail pharmacy chain included the following:

Weeks 1 and 2. Weeks 1 and 2 were designed to give the student a basic understanding of the day-to-day functions of the technical and management aspects of the healthcare organization. By the end of the 2-week period, the student was expected to have a grasp of the operation. For example, by the end of the second week the student was expected to be comfortable communicating with the store and pharmacy manager, using the retail terms he or she had learned up to that point. Specific activities included observing the preceptor interpreting pharmacy reports, ordering inventory, handling customer complaints, and examining workflow procedures.

Weeks 3 and 4. Weeks 3 and 4 were designed to give the student a more in-depth exposure to management issues. The guiding goal during these 2 weeks was the expectation that, at the end of the fourth week, the student would have developed a business sense for what it takes to operate 30 or more pharmacies. The student was expected to be able to explain such terms and concepts as "third party audits," the profitability differences between generic and brand prescriptions, the store/pharmacy relationship, and the components of the annual employee review. In addition, by the end of week 4, the student was expected to have an "applied" knowledge of many of the things he/she had learned in the PharmD/MBA program. Specifically, the student was expected to identify a management problem (in cooperation with the preceptor) that he or she would like to pursue. The student was expected to proceed with this project, and at the end of the 8-week rotation, to present his or her findings to the organization. The purpose of this component of the rotation was to encourage the student to:

- Identify and define a "management" problem and accompanying research objectives;
• Develop a research plan for collecting information;
• Implement (or propose) a research plan for collecting and analyzing the data; and
• Interpret and report the findings or propose a course of action based on the research plan.

In addition, this activity often was extremely helpful to the organization because it addressed a specific problem faced by the organization. The project grade comprised part of the student's rotation grade and was determined by the content of the project, the quality of the literature review and its applicability to the specific problem, and the student's presentation style. "Evaluating payroll in three pharmacies" is an example of a student's project. The goal of this project was to evaluate factors related to why or why not pharmacies met their projected payroll.

**Weeks 5 and 6.** During weeks 5 and 6, the student worked with the company's human resource manager to develop an understanding of the needs of the employees and the organization. By the end of week 6, the student was expected to be able to explain how the chain recruits, interviews (eg, what is/is not legal to ask during an interview), and the steps in hiring employees. In addition, the student was expected to learn company procedures regarding performance appraisals, company benefits, salary, exit interviews, and terminating employees.

**Weeks 7 and 8.** Weeks 7 and 8 were designed to allow the student to spend time with the company's top executives in the region in order to understand the vital roles of the regional vice president and the director of pharmacy operations. A basic goal of this experience was to expose the student to the role top management plays in guiding field management toward the overarching goals of the organization.

**Assessment of Management Rotations**

Students on the management rotation were assessed primarily on exhibiting managerial skills. The primary skills assessed by preceptors were communication (including research project presentation), social and professional interactions, problem solving, ethical decision making, personal and professional growth, and overall managerial skills.

The assessment dimensions were developed by the School of Pharmacy's Director of PharmD/MBA program and the Director of Experiential Education. The instrument was developed in close cooperation with the preceptors involved in the specialized management rotation. An item was listed under each dimension to which it pertained. For example, dimensions under "communication" included such items as "the student demonstrated effective written and verbal skills," and "the preceptor considers the student to be a good listener." The number of items under each dimension ranged from 4 to 10. In addition, each student was assessed on his or her research project and presentation of that research. All students were evaluated at the end of their 8-week rotation. Analysis of reliability was assessed using Cronbach's alpha and revealed a 0.94 numerical coefficient.

The PharmD/MBA class of 2001 included 8 students, while the class of 2002 included 20 students. An independent-samples-t-test was performed on each criterion to determine whether the 2 classes differed significantly from each other. They did not. Table 1 depicts the mean scores of the combined 2 classes on each criterion. As revealed, the mean scores of the classes on each criterion demonstrate that the PharmD/MBA candidates exhibited excellence in the assessed areas.

**RESULTS**

Students assessed their overall experience on the specialized management rotation qualitatively via comments. They were asked about their overall experience on the rotation. All available comments are listed in Appendix 2.

**DISCUSSION**

Although there is no baseline for comparison, based on the empirical data from 28 PharmD/MBA graduates and their preceptors, the specialized management rotation was useful for students. In general, the student comments were enthusiastic and reflected favorably on their experiences. One common theme in the comments was the "real world" experiences that the students received. The specialized management rotation was significantly longer (8 weeks versus 6 weeks) than traditional rotations, and it required that the students contribute by participating and presenting a "real-life" research project. Using the popular work redesign research of Hackman and Oldham as a guide, this rotation design may motivate students by favorably addressing 5 core job dimensions: skill variety, task identity, task significance, autonomy, and feedback. Depending on the specific rotation, students were able to work on many different tasks that required a variety of skills. They experienced task identity and significance because they
Table 1. Dimension Assessment Scores of PharmD/MBA Classes

<table>
<thead>
<tr>
<th>Dimension</th>
<th>N</th>
<th>Range</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>28</td>
<td>2.5</td>
<td>9.27 (0.69)</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>23</td>
<td>3.0</td>
<td>9.30 (0.67)</td>
</tr>
<tr>
<td>Social</td>
<td>27</td>
<td>3.0</td>
<td>9.43 (0.70)</td>
</tr>
<tr>
<td>Ethical</td>
<td>22</td>
<td>2.0</td>
<td>9.48 (0.61)</td>
</tr>
<tr>
<td>Personal and professional growth</td>
<td>28</td>
<td>3.0</td>
<td>9.40 (0.82)</td>
</tr>
<tr>
<td>Research presentation</td>
<td>26</td>
<td>4.0</td>
<td>9.23 (0.85)</td>
</tr>
<tr>
<td>Overall management</td>
<td>28</td>
<td>3.0</td>
<td>9.21 (0.74)</td>
</tr>
</tbody>
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* Likert scale responses: 1 = “Student does not perform” to 10 = “Student excels.” Differences in N arise from some preceptors not observing enough behavior on a particular criterion to make a valid assessment.

were able to work on a project from beginning to end (eg, "what I did makes a difference"). The students experienced a high level of autonomy in both choosing and designing their research projects. Feedback was provided in the form of an evaluation of the student's project (based on the student's presentation of his or her results) and in the form of an overall grade on the rotation.

A major suggestion for other schools of pharmacy that may consider a specialized management rotation is to make it long enough (eg, 8 weeks appears to be a good length) to substantially benefit both the organization and the student. For example, a 4-week rotation may not hold any benefit for the organization because the preceptor may have spent the 4 weeks training the student. It is important that both sides benefit (ie, have a win-win experience).

In addition to rotation length, the basic rotation guidelines should be flexible enough to be applied to diverse organizations. For example, the specifics of an 8-week rotation may be very different for a chain pharmacy than for one at the medical affairs department at a pharmaceutical company. However, the basic parameters of the rotation can remain the same (eg, progressing from learning the various managerial aspects of the organization to contributing to the organization via completion of a pertinent research project).

There are several caveats to this investigation. First, the experiences written about were those of a small group of students from one small southeastern school of pharmacy. Therefore, the results obtained cannot be generalized to different types of schools in different regions of the United States.

A second caveat pertains to the mean evaluation scores preceptors gave their students. Specifically, they were all quite high, with minimal standard deviations. This might suggest 2 things. First, that the best pharmacy students were admitted into the MBA program and they all performed at a high level. Or, second, the preceptors had a difficult time discerning optimal management performance from mediocre or suboptimal performance. Further research is needed to answer this question.

A third limitation is that, because of the design of this study, causality cannot be inferred. Since there was no baseline with which to compare students' managerial skills, it was impossible to conclude that the rotation experience enhanced students' managerial skills.

Despite these caveats, this investigation described one way in which schools of pharmacy can provide stu-
CONCLUSIONS

This paper described the development, implementation, and assessment of a unique 8-week management experiential rotation designed for students enrolled in the PharmD/MBA program at a private southeastern school of pharmacy. The rotation experience appears to be beneficial in bridging the gap between learning about management skills and demonstrating them.

REFERENCES

Appendix 1. MBA Core Curriculum and Plan of Study

**Required Prerequisite Courses**

**ACCT 501**  
Financial Accounting - May be waived if the student has taken the equivalent of Principles of Accounting I and II.

**ECN 501**  
Economic Concepts and Policies - May be waived if the student has taken Equivalent of Principles of Macroeconomics and Principles of Micro-economics

<table>
<thead>
<tr>
<th>YEAR</th>
<th>COURSES</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1-2 (Summer)</td>
<td>Financial Accounting (ACCT 501)</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>This prerequisite may be waived.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic Concepts and Policies (ECN 501)</td>
<td>3 hours</td>
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<tr>
<td></td>
<td>This prerequisite may be waived.</td>
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<tr>
<td>Year 2 (Fall)</td>
<td>Systems Management &amp; Organizational Theory (MGT 511)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Year 2 (Spring)</td>
<td>Organizational Behavior (MGT 513)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Year 2-3 (Summer)</td>
<td>Managerial Accounting (ACCT 511)</td>
<td>3 hours</td>
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<tr>
<td></td>
<td>Health Care Management (MGT 527)</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Marketing Theory &amp; Practice (MKT 511)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Year 3 (Fall)</td>
<td>Macroeconomics for Management (ECN 511)</td>
<td>3 hours</td>
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<tr>
<td></td>
<td>Professional Practice Management (PHAR 704) *</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Clinical Research Methods (PHAR 705) †</td>
<td>3 hours</td>
</tr>
<tr>
<td>Year 3 (Spring)</td>
<td>Professional Practice Selective (PHAR 712) *</td>
<td>3 hours</td>
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<tr>
<td></td>
<td>Biostatistics (PHAR 714) †</td>
<td>3 hours</td>
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<tr>
<td>Year 3-4 (Summer)</td>
<td>Management Science and Information Systems (MIS 513)</td>
<td>3 hours</td>
</tr>
<tr>
<td></td>
<td>Management, Policy Formulation &amp; Systems Management (MGT 611)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Year 4</td>
<td>PharmD/MBA Management Internship (PHAR 805 and 806)</td>
<td>8 hours</td>
</tr>
</tbody>
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*Represent MBA electives  
†Represents completion of MIS 511 requirement

**ADMISSION REQUIREMENTS**

- Be a full-time student with a minimum 3.0 grade point average in the PharmD program.
- Submit MBA application.
- Submit 2 letters of recommendation. One of the letters must come from the PharmD/MBA Program Director.
- Submit a 2- to 3-page narrative discussing why you are interested in pursuing a Masters of Business Administration degree.
- Interview with the PharmD/MBA Director.
- Complete prerequisite course work if required.
Appendix 2. Comments from PharmD/MBA Students Who Completed a Specialized Management Rotation

“The assignment provided an education and hands-on management practice for the MBA rotation.”

“Since I am the first person on the East Coast to have completed this program with _______, I knew that the rotation was not going to be perfect. There are things that need to be evaluated and improved upon, but that is to be expected. I had some very exciting opportunities while on this rotation and many experiences that my classmates may not ever have. With continued efforts by the school,…this rotation can most definitely grow to be the best opportunity for PharmD/MBA students.”

“Excellent rotation for the MBA. Provided different areas of knowledge and skill needed in the business field. Was able to see several different management positions and how a company operates on a daily basis and in crisis.”

“Overall, I felt that I learned a great deal and benefited significantly from my experience at _______. The entire atmosphere was extremely conducive to learning.”

“It was a good experience for me.”

“____ is taking bold steps in disease state management like diabetes care centers, health screenings like cholesterol… I would highly recommend this rotation to other students as they will get a taste of the corporate world.”

“Excellent experience. I was exposed to a tremendous amount of Pharmacy and MGT issues. This rotation should be required for every PharmD/MBA student as it provides a practical experience that cannot be found in textbooks.”

“I highly recommend this rotation for anyone interested in corporate management. The staff here provided excellent information.”

“Very good experience for an MBA student to see how pharmacy decisions are made at the executive level.”

“Amazing, this was a once in a lifetime experience.”

“Excellent! Should be required for all students. Life-long lessons learned. Day-to-day business decisions discussed and made. First-hand witness to pharmacist interviews, decisions dealing with pricing and pharmacist interventions.”

“A great rotation for MBA or for any student who wants to learn about industry opportunities. I was able to take part in meaningful projects (8 weeks is a good time frame). I actually feel I made an impact. I will make one recommendation to plan one week (or less) out in the field with the RMS. I learned all about what they do, but never went out with a RMS – I’m sure I could’ve done this if I pursued it – so make it a set mart of the rotation.”

“I feel like I could have handled more responsibility near the end of the rotation. During the first several weeks, I didn’t feel as productive as I should be, but considering this was my first experience working in a hospital, I think it’s understandable. I wish MBA students with no prior phar-


“age what you don’t understand!”

“This rotation and preceptor deserves high praises. It was a wonderful experience, one that was truly valuable and will not be forgotten.”

“Overall, this rotation was a wonderful experience. Everyone around was great to work with. I truly learned a lot about the behind the scenes action of a hospital pharmacy. I recommend this site to anyone with an interest in hospital/not administration.”